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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,159	03/10/2004	Tae Yong Kim	K-0613	2541

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FLESHNER & KIM, LLP  
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CHANTILLY, VA 20153

EXAMINER
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CONTEE, JOY KIMBERLY

ART UNIT	PAPER NUMBER
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2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/796,159	KIM, TAE YONG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Joy K. Contee	2617	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date: _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/10/04, 12/22/05</u> .                                       | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Jang, US Pub. 2004/0023654.

Regarding claim 1, Jang discloses an apparatus for tracing a GTP resource, comprising: a call tracing unit which receives a call tracing command from an operator through an MMI and performs a call tracing function in response; a call tracing DB which stores call-tracing data currently processed; a GTP-U tracing unit which traces a GTP-U message and reporting the GTP-U message to the call tracing unit; a SGSN interface unit which receives the GTP-U message outputted from the SGSN; and an internet interface unit which transmits the GTP-U message routed at the GTP-U tracing unit to an internet network (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 2, Jang discloses the apparatus of claim 1, further comprising: a call manager which sets a call for a subscriber, searches whether GTP-C tracing

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function for the subscriber is set in the tracing information DB when receiving the GTP-C, and transmits a corresponding GTP resource information to the call tracing unit when the corresponding GTP-C tracing function is set (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 3, Jang discloses the apparatus of claim 1, wherein the GTP-U tracing unit comprises: a call tracing interface unit which processes a GTP-U tracing function message requested from the call tracing unit and transmits a result of the GTP-U data tracing; a TEID converter which converts an IMSI or IP received from the call tracing interface unit to a TEID; a trace load controller which reduces a load of an exchanger, wherein the load is generated from the GTP-U data tracing function; a GTP-U traffic detector which detects a traffic for tracing the GTP-U between the SGSN interface unit and the internet interface unit; and a GTP-U tracing DB which stores IMSI information for mapping the TEID and information for the GTP-U tracing (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 4, Jang discloses a method for tracing a GTP resource, comprising: setting a tracing function for at least one reserved resource of a GTP-U by using a TEID for a subscriber to be traced; and outputting information for the reserved resource by detecting the GTP-U having the tracing function set therein (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 5, Jang discloses the method of claim 4, wherein setting the tracing function comprises: receiving tracing information for the subscriber from an operator; mapping the TEID allotted to the subscriber using the tracing information; and

registering the tracing function of the GTP-U using the TEID; and storing the TEID together with the tracing information to a tracing information DB (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 6, Jang discloses the method of claim 5, wherein the tracing information includes at least one of an IMSI and an IP address of the subscriber (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 7, Jang discloses the method of claim 6, wherein the tracing information comprises a predetermined number of bits indicating a SGSN record type and a tracing type for classifying call watching, call tracing, and the user message tracing according to the SGSN record type (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 8, Jang discloses the method of claim 5, wherein the tracing information DB stores the tracing information, the TEID, and a trace count value notifying the number of the traced message (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 9, Jang discloses the method of claim 4, wherein outputting information for the reserved resource information comprises: receiving and storing the TEID related to the registration of the GTP-U tracing function and the tracing information in a tracing information DB; activating a tracing flag corresponding to the TEID; confirming a TEID of the GTP-U trafficked between the SGSN and the GGSN; confirming whether the tracing flag corresponding to the confirmed TEID is activated by searching the TEID table; and outputting the reserved resource information of the GTP-

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U to the operator by using the TEID. (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 10, Jang discloses the method of claim 9, wherein the reserved resource information comprises an AMA number of trafficked subscriber message, an interface number, a VPI/VCI, a link band, a value directing a stream direction of the data, and the trace count value (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 11, Jang discloses the method of claim 9, wherein outputting the reserved resource information comprises: confirming whether the TEID is stored by searching the tracing information DB; mapping the reserved resource information to a subscriber tracing information corresponding to the TEID; outputting the mapped subscriber tracing information to the operator when the TEID is stored; increasing a trace count value in the tracing information; comparing the trace count value with a trace critical value; and deleting the TEID and the tracing information in the tracing information DB when the trace count value is the same as the trace critical value (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 12, discloses the method of claim 4, further comprising: operating a timer corresponding to a tracing function the duration when the tracing information includes information of the tracing function duration (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 13, discloses the method of claim 12, further comprising: of canceling the GTP-U tracing function by deleting the TEID and the tracing information

from the tracing information DB when the timer is terminated (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 14, discloses the method of claim 4, further comprising: canceling the GTP-U tracing function when the subscriber call is canceled (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 15, discloses the method of claim 14, wherein canceling the GTP-U tracing function comprises: transmitting a session termination signal including an identification information of subscriber whose call is cancelled; and canceling the GTP-U tracing function by deleting the TEID and the tracing information from the tracing information DB using the identification information (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 16, discloses a method for tracing a GTP resource, the GTP trafficked between a SGSN and a GGSN at an exchanger including the SGSN and the GGSN having a call tracing unit, a call manager, a tracing information DB, and GTP-U tracing unit, said method comprising: setting a tracing function for reserved resource of a GTP-U using TEID of a subscriber to be traced; detecting the GTP-U having the tracing function set therein; and outputting information for the reserved resource of the GTP-U message (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 17, discloses the method of claim 16, wherein setting the tracing function comprises: Sending a request for GTP-U tracing function registration to the GTP-U tracing unit by transmitting tracing information for a subscriber received from an

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operator to the GTP-U tracing unit; mapping the TEID allotted to the subscriber using the tracing information; registering the GTP-U tracing function using the TEID; transmitting the TEID to the call tracing unit; and storing the TEID together with the tracing information in the tracing information DB (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 18, Jang discloses the method of claim 17, further comprising: transmitting a response message to the request of the GTP-U tracing function registration to the call tracing unit after the request is sent (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 19, Jang discloses the method of claim 18, further comprising: reporting a failure of the GTP-U tracing function registration to the operator when there is no response message to the request of the GTP-U tracing function registration from the GTP-U tracing unit within a predetermined time (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 20, Jang discloses the method of claim 17, wherein further comprises: transmitting a response message for notifying a failure of the GTP-U tracing function registration from the GTP-U tracing unit to the call tracing unit; and reporting the failure of the GTP-U tracing function registration from the call tracing unit to the operator when the GTP-U tracing unit confirms that the call for the subscriber does not exist by mapping the TEID allotted to the subscriber (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).



Regarding claim 21, Jang discloses the method of claim 17, wherein the tracing information comprises an IMSI and IP address of the subscriber (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 22, Jang discloses the method of claim 21, wherein the tracing information comprises a predetermined number of bits indicating SGSN record type and a tracing type for classifying call watching, call tracing, and GTP-U tracing according to the SGSN record type (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 23, Jang discloses the method of claim 17, wherein the tracing information DB stores the tracing information, the TEID, and a trace count value notifying the number of the traced message (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 24, Jang discloses the method for tracing GTP resource of claim 17, wherein mapping comprises: converting the tracing information (IMSI or IP) received from the call tracing unit to the TEID; and storing the converted TEID and the tracing information at the GTP-U tracing unit; and activating a tracing flag corresponding to the TEID (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 25, Jang discloses the method of claim 16, wherein outputting the reserved resource information comprises: confirming the TEID of a trafficked GTP-U at the GTP-U tracing unit; confirming whether a tracing flag of the TEID is activated by searching the table with the confirmed TEID at the GTP-U tracing unit; transmitting information for the reserved resource of the GTP-U together with the TEID from the

GTP-U tracing unit to the call tracing unit when the tracing flag is activated; and outputting the reserved resource information from the call tracing unit to the operator using the TEID(page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 26, Jang discloses the method of claim 25, wherein the reserved resource information comprises an AMA number of the trafficked GTP-U, an interface number, VPI/VCI, a link band, a value directing a stream direction of the data, and a trace count value (page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 27, Jang discloses the method of claim 25, wherein outputting the reserved resource information to the operator comprises: confirming whether the TEID received from the GTP-U tracing unit is stored by searching the tracing information DB; mapping a subscriber tracing information corresponding to the TEID with the reserved resource information; and outputting the mapped resource information to the operator when the TEID is stored; increasing a trace count value in the call tracing information; and comparing the trace count value with a trace critical value; and deleting the TEID and the tracing information from the tracing information DB when the trace count value is the same as the trace critical value(page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 28, Jang discloses the method of claim 27, wherein the comparison of trace count value and trace critical value is separately carried out for each of up stream and down stream, and the TEID and the tracing information are deleted from the tracing information DB when the trace count value of one of the

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up/down stream and the trace critical value are equal(page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 29, Jang discloses the method of claim 17, further comprising: operating a timer corresponding to a tracing function duration at the call tracing unit when the TEID is received if the tracing information has information of the tracing function duration(page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 30, Jang discloses the method of claim 29, further comprising: canceling the GTP-U tracing function by deleting the TEID and the tracing information from the tracing information DB when the timer is terminated(page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 31, Jang discloses the method of claim 16, further comprising: call tracing unit canceling the GTP-U tracing function when the call of the subscriber is canceled(page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

Regarding claim 32, Jang discloses the method of claim 31, wherein canceling the GTP-U tracing function comprises: transmitting a session termination signal having an identification information of the subscriber whose call is canceled from the call manager to the call tracing unit; and canceling the GTP-U tracing function by deleting the TEID and the tracing information from the tracing information DB using the identification information at the call tracing unit(page 2 [0024-0025], page 3 [0030-0031,0036] and page 4 [0039,0046]).

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***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joy K. Contee whose telephone number is 571.272.7906. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571.272.7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JC

  
JOY K. CONTEE  
PATENT EXAMINER